

CURRICULUM VITAE

NAME

Cotrufo, Maria Francesca

ADDRESS

Soil and Crop Sciences
College of Agricultural Sciences

Nesb
Natural and Environmental Sciences Building

PHONE

(970) 491-6056

EDUCATION

BS, University of Naples, Italy

Ph D, Lancaster Univ/Institute of Terrestrial Ecology, UK

ACADEMIC POSITIONS

March 2, 2006 - July 31, 2008 Full Professor, Second Universita di Napoli.

January 10, 2000 - March 1, 2006 Associate professor, Seconda Universita di Napoli.

December 10, 1994 - January 10, 2000 Assistant professor, Second University of Naples.

SABBATICALS

(2015) OECD, Visiting scientist, sponsored by the OECD, at the Joint Research Center of the European Union, to investigate the long-term interactive effects of N and residue management on crop productivity and SOM stores along a gradient of soil C:N within agro-ecosystems. The work is in collaboration with Prof. Johan Six at ETH, Zurich and is carried out through a combination of data collection, synthesis, interpretation and writing.

OTHER POSITIONS

2008 - Present Full Professor, Colorado State University.

2008 - Present Senior Scientist, Colorado State University.

PUBLISHED WORKS

Refereed Journal Articles

McKee, G. A., Soong, J., Calderon, F., Borch, T., Cotrufo, M. F. (in press). An integrated spectroscopic and wet chemical approach to investigate grass litter decomposition chemistry. *Biogeochemistry*.

McKee, G. A., Soong, J., Calderon, F., Borch, T., Cotrufo, M. F. An integrated spectroscopic and wet chemical approach to investigate grass litter decomposition chemistry. *Biogeochemistry*.

- Boot, C., Haddix, M., Paustian, K., Cotrufo, M. F. (2015). Distribution of black carbon in Ponderosa pine litter and soils following the High park wildfire. *Biogeosciences*.
- Soong, J., Parton, W., Calderon, F., Campbell, E., Cotrufo, M. F. (in press). Chemical traits of fresh or pyrolyzed aboveground plant inputs to soil determine the amount and quality of dissolved organic matter leaching during decomposition. *Biogeochemistry*.
- Jandl, R., Rodeghiero, M., Martinez, C., Bampa, van Wesemael, B., Harrison, R., Guerrini, A., Richter jr, D., Rustad, L., Lorenz, K., Chabbi, A., Miglietta, F. (2014). Current status, uncertainty and future needs in soil organic carbon monitoring. *The Science of the Total Environment*, 468–469, 376-383.
- Soong, J., Reuss, D., Pinney, C., Boyak, T., Stewart, C., Cotrufo, M. F. (2014). Design and operation of a continuous ¹³C and ¹⁵N labeling chamber for uniform or differential, metabolic and structural, plant tissue isotope labeling. *Journal of Visualized Experiments*(e51117), doi:10.3791/51117. <http://www.jove.com/video/51117/design-operation-continuous-13c-15n-labeling-chamber-for-uniform-or?access=FP74RB74>
- Alberti, G., Vicca, S., Inghima, I., Belelli-Marchesini, L., Genesio, L., Miglietta, F., Marjanovic, H., Martinez, C., Matteucci, G., D'Andrea, E., Peressotti, A., Petrella, F., Rodeghiero, M., Cotrufo, M. F. (2014). Soil C:N stoichiometry controls carbon sink partitioning between above-ground tree biomass and soil organic matter in high fertility forests. *E-forest*.
- Gomez, D., Deneff, K., Stewart, C., Zheng, J., Cotrufo, M. F. (2013). Biochar addition rate controls soil microbial abundance and activity in temperate soils. *European Journal of Soil Sciences*, Doi:10.1111/ejss.12097.
- Stewart, C., Zheng, J., Botte, J., Cotrufo, M. F. (2013). Biochar co-generated by fast pyrolysis for bio-oil production is a valuable tool to mitigate green-house gas emissions and increase carbon sequestration in temperate soils. *Global Change Biology Bioenergy*, 5, 153-164.
- Field, J., Keske, C., Birch, G., DeFoort, M., Cotrufo, M. F. (2013). Distributed biochar and bioenergy coproduction: a regionally specific case study of environmental benefits and economic impacts. *Global Change Biology, Bioenergy*, 5, 177-191.
- Battipaglia, G., Saurer, M., Cherubini, P., Calfapietra, C., McCarthy, H. R., Norby, R., Cotrufo, M. F. (2013). Elevated CO₂ increases tree-level intrinsic water use efficiency: insights from carbon and oxygen. *New Phytologist*, 197, 544–554.
- Cotrufo, M. F., Wallenstein, M., Boot, C., Deneff, K., Paul, E. (2013). The Microbial Efficiency-Matrix Stabilization (MEMS) framework integrates plant litter decomposition with soil organic matter stabilization: Do labile plant inputs form stable soil organic matter? Invited Opinion. *Global Change Biology*, 19, 988-995.

Refereed Chapters in Books

- Cotrufo, M. F. (2014). Global Change and Terrestrial Ecosystems, Introduction. *Freedman B. (Ed.) Global Environmental Change*. Springer-Verlag Berlin Heidelberg.

Non-Refereed Journal Articles

- Martinez, C., Alberti, G., Cotrufo, M. F., Magnani, F., Zanutelli, D., Gianelle, D., Camin, F., Cescatti, A. (2016). Belowground carbon allocation patterns as determined by the in-growth soil core ¹³C technique across different ecosystem types. *Geoderma*.
- Haddix, M., Paul, E. A., Cotrufo, M. F. (in press). Dual, differential isotope labeling shows the preferential

- movement of labile plant carbon into mineral-bonded soil organic matter. *Global Change Biology*.
- Soong, J., Dam, M., Wall, D., Cotrufo, M. F. Fire in the tallgrass prairie: belowground biological responses to pyrogenic organic matter inputs and fire history. *Journal of Functional Ecology*.
- Smith, P., e. a., Cotrufo, M. F., e. a. (2016). Global Change Pressures on Soils from Land Use and Management. *Global Change Biology*.
- Bingham, D., Cotrufo, M. F. Organic nitrogen storage in mineral soil: implication for policy and management. *Science of the Total Environment*.
- Andres, P., Moore, J. C., Simpson, R. T., Selby, G. N., Cotrufo, M. F., Deneff, K., Haddix, M., Shaw, E., Milano de Tomasel, M. C., Molowny, R., Wall, D. (2016). Soil food web stability in response to grazing in a semi-arid prairie: the importance of soil heterogeneity. *Soil Biology and Biochemistry*.
- Soong, J., Vandegehuchte, M., Horton, A., Nielsen, U., Deneff, K., Shaw, E., Milano De Tomasel, C., Parton, W. J., Wall, D., Cotrufo, M. F. (2016). Soil microarthropods support ecosystem productivity and soil C accrual: evidence from a litter decomposition study in the tallgrass prairie. *Soil Biology and Biochemistry*.
- Smith, P., House, J. I., Bustamante, M., Sobocká, J., Harper, R., Pan, G., West, P. C., Clark, J. M., Adhya, T., Rumpel, C., Paustian, K. H., Kuikman, P., Cotrufo, M. F., Elliott, J. A., McDowell, R., Griffiths, R. I., Asakawa, S., Bondeau, A., Jain, A. K., Meersmans, J., Pugh, T. A. (2016). Global change pressures on soils from land use and management. *Global change biology*, 22(3), 1008-28.
- Cotrufo, M. F., Boot, C., Abiven, S., Foster, E., Haddix, M., Peisser, M., Wuster, C., Bird, M., Schmidt, M. Toward an accurate quantification of pyrogenic carbon in the environment: An integration of analytical approaches. *Organic Geochemistry*.
- Soong, J., Parton, W., Calderon, F., Campbell, E., Cotrufo, M. F. (2015). A new conceptual model on the fate and controls of fresh and pyrolyzed plant litter decomposition. *Biogeochemistry*.
- Smith, P., Cotrufo, M. F., e. a. (2015). Biogeochemical cycles and biodiversity as key drivers of ecosystem services provided by soils. *SOIL*.
- Shaw, E., Deneff, K., Milano de Tomasel, C., Cotrufo, M. F., Wall, D. (2015). Burning Management in the tallgrass prairie affects root decomposition, soil food web structure and carbon flow. *Soil Discussion*, 2, 923-953.
- Jiang, X., Deneff, K., Stewart, C., Cotrufo, M. F. (2015). Controls and dynamics of biochar decomposition and soil microbial abundance, composition, and carbon use efficiency during long-term biochar-amended soil incubations. *Biology and Fertility of Soils*.
- Cotrufo, M. F., Soong, J., Horton, A., Haddix, M., Campbell, E., Wall, D., Parton, W. (2015). Soil organic matter formation from biochemical and physical pathways of litter mass loss. *Nature Geosciences*.
- Zhu, X., Tang, J., Riley, W., Wallenstein, M., Cotrufo, M. F. Soil priming efficiencies inferred from laboratory measurements incorrectly represent field conditions: Insights from a model-experiment approach. *Global Change Biology*.
- Soong, J. L., Cotrufo, M. F. (2015). Annual burning of a tallgrass prairie inhibits C and N cycling in soil, increasing recalcitrant pyrogenic organic matter storage while reducing N availability. *Global Change Biology*.

- Jiang, X., Denef, K., Stewart, C., Cotrufo, M. F. Controls and dynamics of biochar decay and soil microbial responses during long-term biochar-amended soil incubations. *Soil Biology and Biochemistry*.
- Soong, Calderon, Betzen, Cotrufo, M. F. (2014). Quantifying and FTIR characterizing dissolved organic carbon and total dissolved nitrogen leaching from litter: a comparison of methods across litter types. *Plant and Soil*, 385, 125-137.
- Cotrufo, M. F., Soong, J., Vandegehuchte, M., Nguyen, T., Denef, K., Shaw, E., Milano de Tomasel, C., Sylvain, Z., Milano De Tomasel, C., Wall, D. (2014). Naphthalene addition to soil surfaces: an effective method to suppress soil micro-arthropods with negligible direct effects on soil C dynamics. *Journal of Applied Soil Ecology*, 74, 21-24.
- Denef, K., Del Galdo, I., Venturi, A., Cotrufo, M. F. (2013). Soil carbon and nitrogen stocks and distribution across organic matter fractions in European soils under different land use. *Open Journal of Soil Science*, 3, 297-313.

Non-Refereed Chapters in Books

- Cotrufo, M. F., Kuikman, P. (2015). Chapter.2.2: Soils and the Nutrient Cycle. *Status of the World's Soil Resource Report*. FAO.
- Ramlow, M., Keske, C., Cotrufo, M. F. (2016). *Biochar in Colorado*. Colorado State University Agricultural Extension Bulletin.

Abstract

- Fulton-Smith, S., Jahn, C. E., Cotrufo, M. F. (2013). *Exploring the Potential for Biofuel Crops to Sequester Carbon in the Deep Soil*. Colorado Center for Biorefining and Biofuels.

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS

- June 2016, "From Plants inputs to SOM formation : pathways and controls", Accademia dei Gergofili, (Presenter) Cotrufo, M. F.
- October 2015, "From Plants inputs to SOM formation : Pathways and controls", (Presenter) Cotrufo, M. F.
- October 2015, "From Plants inputs to SOM formation : through the eyes of isotopes", University of California, Irvine, (Presenter) Cotrufo, M. F.
- September 2015, "Soil organic matter formation from litter decomposition: A call for modeling of both DOM and POM pathways", 5th International SOM Conference, (Presenter) Cotrufo, M. F., peer-reviewed/refereed.
- September 2015, "Limited utilization of pyrogenic carbon by soil microbes and nematodes reduced soil C and N cycling in tallgrass prairie soils with different fire history", SOM 2015: 5th International SOM conference, (Presenter) Soong, J., peer-reviewed/refereed.
- September 2015, "Litter chemistry controls on carbon partitioning between DOC and CO₂ fluxes during litter decomposition", SOM 2015: 5th International SOM conference, (Presenter) Soong, J., peer-reviewed/refereed.
- September 2015, "Stoichiometric constrains on soil C sequestration: a continental-scale analysis", SOM 2015: 5th International SOM conference, (Presenter) Cotrufo, M. F., peer-reviewed/refereed.

September 2015, "Toward an accurate quantification of truly old SOC: An integration of analytical approaches to estimate pyrogenic carbon.", SOM 2015: 5th International SOM conference, (Presenter) Cotrufo, M. F., peer-reviewed/refereed.

July 2015, "From Plants inputs to SOM formation : through the eyes of isotopes", Seconda Universita' di Napoli, (Presenter) Cotrufo, M. F.

May 2015, "From Plants to SOM: pathways and controls", Munich University, (Presenter) Cotrufo, M. F.

December 17, 2014, "Transport of Black Carbon Across the Terrestrial-Aquatic Interface", AGU Fall meeting 2014, (Presenter) Boot, C., San Francisco, peer-reviewed/refereed.

December 16, 2014, "Recalcitrance: an inherent relative attribute of plant litter describing its potential decomposability.", (Presenter) Cotrufo, M. F., AGU Fall meeting, San Francisco, peer-reviewed/refereed.

December 16, 2014, "The Litter Decomposition and Leaching (LIDEL) model: modeling plant litter decomposition to CO₂, dissolved organic matter and microbial products through nitrogen and lignin controls on microbial carbon use efficiency", (Presenter) Campbell, E., San Francisco, peer-reviewed/refereed.

December 15, 2014, "Evaluation of a Thermodynamically Based Soil Microbial Decomposition Model Based on a ¹³C Tracer Study in Arctic Tundra Soils", AGU, San Francisco, peer-reviewed/refereed.

December 15, 2014, "Above-ground litter-derived C and N stabilization in SOM: the key role of dissolved organic matter leaching and litter fragmentation.", AGU Fall meeting, (Presenter) Cotrufo, M. F., San Francisco, peer-reviewed/refereed.

December 15, 2014, "Disentangling controls on mineral-stabilized soil organic matter using a slurry incubation", AGU Fall Meeting, (Presenter) Lavallee, J., San Francisco, peer-reviewed/refereed.

December 15, 2014, "Frequent burning of a tallgrass prairie increases soil C and N storage as pyrogenic organic matter, while reducing N availability", AGU Fall meeting, (Presenter) Soong, J., San Francisco, peer-reviewed/refereed.

November 20, 2014, "From plant litter decomposition to soil organic matter formation:", NREL Symposium 2014, Fort Collins.

November 2, 2014, "Designing authentic learning experiences through video labs in a higher level online agriculture and climate change course", ASA-CSSA-SSSA, Long Beach, peer-reviewed/refereed.

November 2, 2014, "Do biochar soil amendments sustain corn yield under deficit irrigation, by increasing soil moisture and nutrient cycling?", ASA-CSSA-SSSA, (Presenter) Foster, E., Long Beach, peer-reviewed/refereed.

November 2, 2014, "Examining the Potential of Biochar in Post-Wildfire Rehabilitation", ASA-CSSA-SSSA, Long Beach, peer-reviewed/refereed.

November 2, 2014, "Think Deep: understanding the importance of rooting depth on carbon sequestration potential of bioenergy crops", ASA-CSSA-SSSA, (Presenter) Fulton-Smith, S., Long Beach, peer-reviewed/refereed.

November 2, 2014, "All is not lost! Contribution of above-ground litter mass loss to the formation of soil organic matter", ASA-CSSA-SSSA Annual meeting, (Presenter) Cotrufo, M. F., Long beach, peer-reviewed/refereed.

November 2, 2014, "Biochar: is it a sustainable solution to dry land agriculture, forest soil reclamation and greenhouse gas mitigation?", ASA-CSSA-SSSA annual meeting, (Presenter) Cotrufo, M. F., Long beach, peer-reviewed/refereed.

December 11, 2013, "Quantifying litter decomposition losses to dissolved organic carbon and respiration", AGU Fall meeting 2013, (Presenter) Soong, J., San Francisco, peer-reviewed/refereed.

December 10, 2013, "Soil C:N stoichiometry controls carbon sink partitioning between above-ground tree productivity and soil organic matter in high fertility forests", AGU Fall meeting 2013, (Presenter) Cotrufo, M. F., San Francisco, peer-reviewed/refereed.

November 5, 2013, "From litter decomposition to SOM formation: what are we missing?", ASA-CASA-SSSA 2013, (Presenter) Cotrufo, M. F., Tampa, peer-reviewed/refereed.

November 4, 2013, "Effects of Long-term Biochar Addition on Soil Microbial Community Composition and Carbon Use Efficiency", ASA-CASA-SSSA, (Presenter) Jiang, X., Tampa, peer-reviewed/refereed.

November 4, 2013, "Quantifying litter decomposition losses to dissolved organic carbon and carbon dioxide", ASA-CASA-SSSA, Tampa, peer-reviewed/refereed.

October 17, 2013, "Sustainable Bioenergy: Exploring The Potential For Biofuel Crops To Sequester Carbon In The Deep Soil", Colorado Center for Biorefining and Biofuels Spring Semi-Annual Meeting, Colorado Center for Biorefining and Biofuels, (Presenter) Fulton-Smith, S., Fort Collins, CO.

August 26, 2013, "From litter decomposition to soil organic matter formation through the eyes of isotopes", University of Zurich, CH.

August 16, 2013, "Can Biofuel Crops Contribute to Soil Carbon Storage In Deep Soil?", Front Range Isotope Day Symposium, (Presenter) Fulton-Smith, S., Fort Collins, CO.

April 8, 2013, "From litter decomposition to soil organic matter formation: through the eyes of isotopes", University of Antwerp, Belgium.

April 4, 2013, "Full accounting of Pyrogenic-C dynamics at the watershed scale: the case study of the High Park Fire", BCGExtreme 2013, (Presenter) Cotrufo, M. F., Innsbruck, peer-reviewed/refereed.

2012, "Birch, G. L., Field, J. L., Keske, C. M. H., DeFoort, M. W., & Cotrufo, M. F. (2012, December 5). A Regionally-Specific Assessment of the Carbon Abatement Potential of Biochar. American Geophysical Union Fall Meeting, San Francisco, CA."

2012, "Cotrufo M.F. (2012) Advancing the understanding of plant-soil-atmosphere C and N exchanges by stable isotope techniques. Isotope Mass Spectrometry Meeting. Trento Italy April 2012".

2012, "Cotrufo M.F. (2012) From Litter decomposition to soil organic matter formation: through the eyes of

isotopes. Front Range Isotope Day.
Laramie, Wyoming. August 2012".

2012, "Cotrufo M.F. et al., (2012) The
Microbial Efficiency-Matrix
Stabilization (MEMS) framework:
Do labile plant inputs form
stable soil organic matter? AGU Fall
meeting, San Francisco 2-7 December,
2012.", peer-reviewed/refereed.

2012, "Cotrufo M.F., et al. Effects of biochar
additions to soil organic carbon
mineralization and physical
aggregation. EUROSOLS 2012. July 2-6,
2012, Bari, Italy".

2012, "Field, J. L., & Cotrufo, M. F. (2012,
October 22). Liming Effects and Winter
Wheat Yield Response in Biochar-Amended
Agricultural Soils. Presentation at the
ASA, CSSA, and SSSA International
Annual Meetings, Cincinnati, OH.".

2012, "Gomez D., Stewart C., Deneff K., Zheng
L. & Cotrufo M.F. Biochar addition
rate and soil type effect soil
microbial community abundance and
composition. 2012 US Biochar
Conference. Sonoma, California.".

2012, "Gomez J.D., Stewart C., Deneff K., Zheng
L., Cotrufo M.F. Interactions between
biochar and soil microbial community
abundance and composition. EUROSOLS
2012 July 2-6, Bari Italy".

2012, "Guilbert K., Soong J., Cotrufo
M.F. Developing classroom research
modules through in-depth understanding
of the research process. AGU FALL
meeting 2012. San Francisco.".

2012, "Horton A.J., al. & Cotrufo M.F.
Investigating the fate of Nitrogen from
litter into soil soil organisms and
plants at a tallgrass prairie by use of
¹⁵N enrichment. ESA meeting, Portland.".

2012, "Soong J. & Cotrufo M.F. How are soil
carbon dynamics affected by black
carbon versus litter inputs.
EUROSOLS 2012, July 2-6 Bari, Italy".

2012, "Soong J., Wall D., Parton W & Cotrufo M.F. TRACKING THE FATE OF LITTER DERIVED CARBON: WHY DOES SOIL BIODIVERSITY MATTER? EUROSOLS 2012, July 2-6, Bari, Italy".

2012, "Syewart C., al. & Cotrufo M.F. Biochar addition rate controls GHG fluxes, soil priming, and microbial activity in temperate soils. ASA-CSSA-SSSA 2012, Cincinnati."

2011, "Cotrufo M.F. "Detecting Changes in Soil Carbon". G-Scan meeting. Florence, April 2011".

2011, "Cotrufo MF, Soong JL, Horton AJ, Deneff K, Nielsen U, Parton W, Wall D. An integrated experimental and modeling study to advance process understanding and forecasting of C and N fluxes from the litter layer to the soil and the atmosphere" AGU Fall meeting, San Francisco, December 2011", peer-reviewed/refereed.

2011, "Cotrufo MF, Stewart C, Jiyong Z. "Do soil biochar additions prime or sequester soil organic carbon?" ACS annual meeting. Denver, August 2011", peer-reviewed/refereed.

2011, "Cotrufo MF, Stewart C., Jioyng Z. "Interactive effects of biochar addition rates and soil type on black C losses as CO₂ and sequestration in different soil organic matter fractions". ASA-CSSA-SSSA, Sant'Antonio, October 2011", peer-reviewed/refereed.

2011, "Field, J., Cotrufo, M.F. Biochar for soil amelioration and improved crop yields: Liming value and effects on alkaline Colorado soils. ACS Annual meeting. Denver, August 2011", peer-reviewed/refereed.

2011, "K. Deneff, D. Huygens, P. Boeckx and M.F. Cotrufo. Mycorrhizosphere C cycling: Insights from SIP studies. SOM Conference, Belgium July 2011."

2011, "Soong J., Nielsen U., Deneff K., Parton W., Wall D., Cotrufo M. F. Tracking litter derived carbon in terrestrial

ecosystems using stable isotopes. ESA annual meeting. Austin, August 2011", peer-reviewed/refereed.

2011, "Soong JL, K Denef, UN Nielsen, ML Vandegehuchte, W Parton, DH Wall, MF Cotrufo. "Biological mechanisms controlling loss vs. belowground storage of decomposing litter carbon: a stable isotope approach" AGU Fall meeting, San Francisco, December 2011", peer-reviewed/refereed.

2011, "Stewart, C., Zheng, J., Cotrufo M.F., Impact of biochar addition rate and soil type on greenhouse gas emissions: the importance of long-term data. ACS Annual meeting, Denver, August 2011", peer-reviewed/refereed.

2010, "Cotrufo M.F. "Above ground litter decomposition: moving beyond mass loss. AGU Fall meeting, San Francisco 13-17 September 2010".

2010, "Cotrufo M.F.: "Women in a changing climate"- 2010 Diversity Conference, September 21-23, 2010. Colorado State University".

2010, "Soong, J., Stewart, C., Reuss, D., Pinley, C. & Cotrufo, M.F.: "A novel design for a dual stable isotope continuous labeling chamber: results on labeling efficiency and C and N allocation in *Andropogon gerardii*". AGU Fall meeting, San Francisco, 13-18 December, 2011".

2010, "Stewart, C., Zheng, L., Cotrufo M.F.: Potential mechanisms of biochar to stimulate nutrient retention and carbon sequestration in agricultural soils. ASA-CSSA-SSSA annual meeting, Long Beach November 1-3, 2010".

TEACHING:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u>Cr. Hrs.</u>	<u>Enrollment</u>
2016	Spring	ECOL799 - Dissertation	18	21
2016	Spring	SOCR799 - Dissertation	18	12
2016	Spring	ECOL698 - Research	18	51
2016	Spring	SOCR670 - Terrestrial Ecosystems Isotope Ecology	3	5
2016	Spring	SOCR670 - Terrestrial Ecosystems Isotope Ecology - Lab	0	5
2015	Fall	ECOL799 - Dissertation	18	26
2015	Fall	SOCR799 - Dissertation	18	11

2015	Fall	SOCR796 - Group Study	18	0
2015	Fall	ECOL698 - Research	18	48
2015	Fall	SOCR400 - Soils and Global Change: Science and Impacts	3	2
2015	Fall	SOCR400 - Soils and Global Change: Science and Impacts	3	0
2015	Fall	SOCR400 - Soils and Global Change: Science and Impacts - Lab	0	2
2015	Fall	SOCR400 - Soils and Global Change: Science and Impacts - Lab	0	0
2015	Summer	SOCR795 - Independent Study	18	1
2015	Spring	SOCR799 - Dissertation	18	12
2015	Spring	ECOL698 - Research	18	47
2014	Fall	SOCR799 - Dissertation	18	15
2014	Fall	ECOL698 - Research	18	63
2014	Fall	SOCR400 - Soils and Global Change: Science and Impacts	3	8
2014	Fall	SOCR400 - Soils and Global Change: Science and Impacts - Lab	0	8
2014	Spring	ECOL698 - Research	18	46
2014	Spring	SOCR530 - Scientific Writing	1	6
2014	Spring	SOCR792 - Seminar	1	8
2014	Spring	SOCR670 - Terrestrial Ecosystems Isotope Ecology	3	7
2014	Spring	SOCR670 - Terrestrial Ecosystems Isotope Ecology - Lab	0	7
2013	Fall	ECOL799 - Dissertation	18	27
2013	Fall	SOCR799 - Dissertation	18	19
2013	Fall	ECOL698 - Research	18	55
2013	Fall	SOCR792 - Seminar	1	10
2013	Fall	SOCR784 - Supervised College Teaching	18	6
2013	Spring	ECOL698 - Research	18	53
2013	Spring	SOCR441 - Soil Ecology	3	11
2013	Spring	SOCR441 - Soil Ecology - Lab	0	11
2013	Spring	SOCR784 - Supervised College Teaching	18	2
2013	Spring	SOCR670 - Terrestrial Ecosystems Isotope Ecology	3	8
2013	Spring	SOCR670 - Terrestrial Ecosystems Isotope Ecology - Lab	0	8
2012	Fall	ECOL698 - Research	18	55
2012	Fall	SOCR400 - Soils and Global Change: Science and Impacts	3	6
2012	Fall	SOCR400 - Soils and Global Change: Science and Impacts - Lab	0	6
2012	Fall	SOCR580A6 - Soils and Global Change:Graduate Seminar	1	0
2012	Spring	ECOL698 - Research	18	58
2011	Fall	ECOL592 - Interdisciplinary Seminar in Ecology	3	10
2011	Fall	ECOL698 - Research	18	45
2011	Spring	ECOL799 - Dissertation	18	12
2011	Spring	ECOL698 - Research	18	39
2011	Spring	SOCR670 - Terrestrial Ecosystems Isotope Ecology	3	8
2011	Spring	SOCR670 - Terrestrial Ecosystems Isotope Ecology - Lab	0	8
2010	Fall	ECOL698 - Research	18	41
2010	Spring	SOCR580A5 - Soils and Global Change	2	9
2009	Fall	ECOL698 - Research	18	42
2009	Spring	SOCR680A2 - Terrestrial Ecosystems Isotope Ecology	2	9

Guest Lectures:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u># of Guest Lectures</u>	<u>Delivery Mode</u>
2015	Fall	ESS311 - Ecosystem Ecology	1	Face to Face
2015	Fall	ESS 220 - Skills for Undergraduate Participation in Ecological Research	1	Face to Face
2014	Fall	ENGR601 - Bioenergy	1	Face to Face
2014	Fall	351 - Ecosystem Ecology	1	Face to Face
2014	Fall	ECOL610 - Ecosystem Ecology	1	Face to Face
2014	Fall	Skills for Undergraduate Participation in Ecological Research	1	Face to Face
2014	Spring	SOCR - Soil-Plant-nutrient relationships	2	Face to Face

Evidence of Teaching Effectiveness (Annual Input)

Other Evidence

Fall 2015, SOCR 400–Soils and Global Change: Science and Impacts
The course was cancelled due to insufficient enrollment

Fall 2015, SOCR 400–Soils and Global Change: Science and Impacts
The course was cancelled due to insufficient enrollment

Fall 2015, SOCR 400–Soils and Global Change: Science and Impacts - Lab
The course was cancelled due to insufficient enrollment

Fall 2015, SOCR 400–Soils and Global Change: Science and Impacts - Lab
The course was cancelled due to insufficient enrollment

EXTENSION/ENGAGEMENT ACTIVITIES/ACCOMPLISHMENTS

Classroom activity; participation to meetings; program development

Development of the Science Enrichment Program for Bennett Elementary. Fort Collins, CO. Number of times program was made: 3. Total number of participants: 100. Percent Responsible: 75%. 4th Quarter 2015.

Field Day

Demonstration of soil respiration measurements. Adult. Percent Responsible: 100%. 2nd Quarter 2014.

Lecturer in the Webinar for science teachers

Biochar for a sustainable future: from the global to the molecular scale. Adult. Percent Responsible: 90%. 4th Quarter 2014.

Presentation

Black carbon in soils. Percent Responsible: 100%. 2012.

Black Carbon in soils: from natural disturbance to management options. Percent Responsible: 100%. 2012.

COMMITTEES

CSU Faculty Council.

NREL Executive Committee.

Eco-core Analytical Services CSU core facility, (January 2010 - Present).

Budget Area review Committee, (December 2015 - January 2016).

GDPE Executive Committee, (September 2012 - May 2014).

Eco-core Analytical Services CSU core facility.

NREL Stable Isotope Laboratory.

Research Committee, (January 2016 - Present).

Search Committee, (2015 - Present).

Search Committee for Assistant/Associate Professor in Agricultural Systems Science, (September 2014).

Search Committee for a Post-Doc position, (December 2013).

Search Committee for the position of the EcoCore Research and Business Manager, (September 2013).

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

AGU.

American Chemical Society.

American Ecological Society.

American Geophysical Union.

ESA.

International Biochar Initiative.

Italian Ecological Society.

Italian Ecological Society.

Soil Science Society of America.

SSSA.

EcoPress. (February 1, 2014).

InnovatioNews. (February 8, 2013).

North Forty News. (February 7, 2013).

Reviewer, Ad Hoc Reviewer, UK National Environmental Research Council.

Reviewer, Ad Hoc Reviewer, Fonds Wetenschappelijk Onderzoek, The Netherlands. (2016 - Present).

Reviewer, Ad Hoc Reviewer, NSF-Geosciences. (2015 - Present).

Program Organizer, Front Range Isotope Day 2014 meeting, Fort Collins,, CO. (August 2014 - Present).

Reviewer, Ad Hoc Reviewer, National Agency for the Evaluation of Universities and Research Institutes (Italy). (2012 - Present).

Editor, Journal Editor, Global Change Biology. (2003 - Present).

Reviewer, Journal Article, Journal (e.g., Nature, PNAS, Ecology, Biogeosciences etc.). (January 1993 - Present).

Reviewer, Grant Proposal, Austrian Science Fund (FWF). (2015).

Reviewer, Ad Hoc Reviewer, Universität für Bodenkultur Wien. (December 19, 2014).

Reviewer, Ad Hoc Reviewer, NSF-DEB. (November 2014).

Reviewer, Grant Proposal, NSF-DEB. (April 2014).

OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH

External PhD dissertation examiner, University of Zurich, Zurich.

External reviewer for tenure and promotion. (August 2015).

Interaction with Industry, MARS. (August 24, 2015 - August 25, 2015).

Agricultural and Applied Economics Association Executive Board.
